

**REMARKS**

Claims 9-22 are all the claims pending in the application.

Claims 9-22 are rejected.

Claims 11-16 and 19-22 are rejected under 35 U.S.C. 112, second paragraph.

Claims 9 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Haines (U.S. Patent 5,475,511).

Claims 11-12 and 19-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Kitamura (JP 11-202741).

Claims 13-16 and 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kitamura (JP 11-202741).

Claims 10 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haines (U.S. Patent No. 5,475,511) in view of Kitamura (JP 11-202741).

The Applicants traverse the rejections and request reconsideration.

***Section 112 rejection***

The claims have been amended to overcome the rejections based on section 112.

***Rejection of claims 9 and 17 under section 102(b) based on Haines***

Haines discloses techniques for generating computer-generated holograms. However, there is no disclosure related to virtual point/line sources of light replacing the surface of the objects as in the present invention. The Examiner refers to Fig. 1 of Haines and its accompanying description in alleged support for his contention that Haines anticipates claims 9 and 17. In Fig. 1, a hologram element 12 is located at a distance “a” and “b” in the x and y

directions. The Examiner finds point 22 to be equivalent to a virtual point source of light.

However, 22 is merely a point in the viewplane. On the other hand, the present invention, as recited in claims 9 and 17, requires each cell in the hologram to have information related to a luminance of a virtual point light source corresponding to a point on the object.

The “virtual point light sources” as in the present invention can at best be considered to be equivalent to the central point of elemental hologram 12 of Haines. However, unlike Haines claims 9 and 17 (as amended) require the virtual point light sources to be located at a position away from the hologram plane.

***Rejection of claims 11-12 and 19-20 under section 102(b) based on Kitamura***

Regarding claims 11 and 19, the Examiner incorrectly alleges that the “point on the object” of Kitamura is equivalent to the “virtual point light sources.” However, as can be seen from the embodiment shown in Fig. 1 of the present Specification, the virtual point light sources are different from the point on the object of Kitamura. This figure clearly shows that  $Q_i$  is different from object 10. The above claims have been amended to specifically recite this limitation.

***Rejection of claims under section 103 based on Haines and Kitamura***

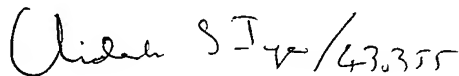
As noted above, the claims have been amended to recite that the virtual point light sources or the virtual condensing points are located at a position away from the hologram plane and independent of the object. The combined teachings of Haines and Kitamura at least do not suggest this feature.

Claims 13-16 and 21-22 recite that (as shown in the exemplary embodiment of Fig. 4) the virtual condensing points  $Q_i$  are on the viewer side of the hologram plane 12 and the reference light is incident from the side opposite to the viewer side of the hologram plane 12. However, the Applicants respectfully submit that the hologram is not a hologram recorded by reflection geometry. As shown in Fig. 4, light converges from the hologram side to the virtual point  $Q_i$  and diverges to the viewer side. In other words, both reference light and object light are towards the viewer side, providing a transmission type hologram as in Fig. 1.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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